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TRANSCRIPT OF RECORD.

SUPREME COURT OF THE UNITED STATES.

OCTOBER TERM, 1884.

No. 1231.

CLAUDE CAILLOT AND EDMOND LEROUX, PARTNERS AS CAILLOT AND LEROUX, PLAINTIFFS IN ERROR,

vs

GUSTAVUS F. DEETKEN.

IN ERROR TO THE CIRCUIT COURT OF THE UNITED STATES FOR THE DISTRICT OF CALIFORNIA.

FILED NOVEMBER 28, 1884.

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JUDD & DETWEILER, PRINTERS, WASHINGTON.

1 *Summons.*

UNITED STATES OF AMERICA:

Circuit Court of the United States, Ninth Circuit, District of California.

GUSTAVUS F. DEETKEN, Plaintiff,

vs.

CLAUDE CAILLOT and EDMOND LEROUX, partners doing business under the firm name and style of Caillot & Leroux, Defendants.

Action brought in the said circuit court, and the complaint filed in the office of the clerk of said circuit court, in the city and county of San Francisco.

The President of the United States of America to Claude Caillot and Edmond Leroux, Defendants, Greeting:

You are hereby required to appear in an action brought against you by the above-named plaintiff in the circuit [court] of the United States, ninth circuit, in and for the district of California, and to file your plea, answer, or demurrer to the complaint filed therein (a certified copy of which accompanies this summons) in the office of the clerk of said court, in the city and county of San Francisco, within ten days after the service on you of this summons—if served in this county; or, if served out of this county, then within forty days—or judgment by default will be taken against you.

2 The said action is brought to obtain a judgment against you for the sum of fifteen thousand dollars, actual damages, for an alleged infringement of letters patent granted to said plaintiff by the United States of America, together with such further sum, not exceeding in the aggregate three times the amount of said actual damages, and for such other and further relief as he may be entitled to receive, and more fully set out in the complaint herein, and for the costs of this action, and if you fail to appear, and plead, answer, or demur, as herein required, default will be entered against you, and each of you, and the plaintiff will apply to the court for the relief demanded in the complaint herein.

Witness the Honorable Morrison R. Waite, Chief Justice of the Supreme Court of the United States, this 19th day of November, in the year of our Lord one thousand eight hundred and seventy-nine, and of our Independence 104th.

[SEAL.] L. S. B. SAWYER, *Clerk*,
By J. F. O'BEIRNE, *Deputy Clerk*.

3 UNITED STATES MARSHAL'S OFFICE,
DISTRICT OF CALIFORNIA.

I hereby certify that I received the within writ on the 20th day of November, 1879, and personally served the same on the 24th day of November, 1879, by delivering to and leaving with Claude Caillot and Edmond Leroux, said defendants named therein, personally, at

Grass Valley, Nevada county, in said district, a certified copy thereof, together with a certified copy of the bill of complaint attached thereto.

A. W. POOLE,
U. S. Marshal,
By W. L. McEWEN,
Dep'ty.

(Endorsed:) Filed Nov'r 29, 1879. L. S. B. Sawyer, clerk, by J. F. O'Beirne, deputy clerk.

4 *Complaint.*

In the Circuit Court of the United States, Ninth Circuit, District of California.

GUSTAVUS F. DEETKEN, Plaintiff,
vs.
CLAUDE CAILLOT and EDMOND LEROUX, partners doing business under the firm name and style of Caillot & Leroux, Defendants.

Gustavus F. Deetken, a citizen of the United States of America, and a resident of the city and county of San Francisco, State of California, plaintiff in this action, complains of the defendants Claude Caillot and Edmond Leroux, partners doing business under the firm name and style of Caillot & Leroux, and for this cause of action alleges—

I.

That said defendants, Claude Caillot and Edmond Leroux, are, and ever since the 1st day of January, 1876, have been, partners doing business in the town of Grass Valley, Nevada county, State of California, under the firm name and style of Caillot & Leroux.

II.

That plaintiff, on and prior to the 6th day of January, 1863,
5 was the original and first inventor of a certain new and useful invention on machines, to wit, an improved apparatus for extracting gold from pyrites; that the same was a new and useful invention, and consisted of an improved apparatus for extracting gold from pyrites by means of chlorine gas.

III.

That the same was not known or used by others before plaintiff's said invention, and at the time of his application for a patent therefor had not been in public use or on sale for two years, nor abandoned, nor was it proved to have been abandoned.

IV.

That said plaintiff, being so as aforesaid the inventor thereof, on the 6th day of January, A. D. 1863, upon due application therefor, did obtain letters patent of the United States for the said invention;

granting and securing to him, for the full term of seventeen years from the last-named date, the full and exclusive right and liberty of making, constructing, using, and vending to others to be used, the said invention and improvement throughout the United States and the Territories thereof. Said letters patent were issued in due form of law, under the seal of the Patent Office of the United States, and were signed by the Secretary of the Interior and countersigned by the Commissioner of Patents of the United States, and bore date the day and the year last aforesaid, a description whereof and of
6 said invention more fully appears in said letters patent, which said letters patent are in due form of law and ready in court to be produced by the plaintiff, or a duly authenticated copy thereof.

V.

And plaintiff says that he is still the owner and holder of said letters patent and of the rights, privileges, and liberties by them granted in and for all the said States and territory, except the territory embraced by Amador county, in said State of California. That prior to the issuing of said letters patent all proceedings were had and taken which were required by law to be had or taken previous to the issuance of letters patent granting special rights and liberties for new and useful inventions.

VI.

And the plaintiff further says that from the time of the granting to him of the said letters patent he has made, used, and vended to others to be used, the said improvement and apparatus to his great advantage and profit; yet the said defendants, well knowing the premises, but contriving to injure the plaintiff, did heretofore, to wit, on or about the 2nd day of January, 1876, and at divers other times before and afterwards, during the said term of seventeen years mentioned in said letters patent, and before the commencement of this action, at or near the town of Grass Valley, in the county
7 of Nevada, State of California, unlawfully and wrongfully, and without the consent and against the will of plaintiff or his assigns, did use, and cause to be used, the said apparatus and improvement, in violation and infringement of the exclusive right so secured to plaintiff by said letters patent as aforesaid, and contrary to the form of the statute of the United States in such case made and provided, whereby the plaintiff has been greatly injured and deprived of great profit and advantage which he otherwise would have derived from said improvement, and he has sustained actual damages to the amount of fifteen thousand dollars ($15,000), and by the force of the statute aforesaid an action has accrued to him to recover the said actual damages, and such additional amount, not exceeding in the whole three times the amount of such actual damages as the court may see fit to order and adjudge, besides costs; yet the said defendants, although requested, have never paid the same, or any part thereof, to the plaintiff, but have refused and yet refuse so to do.

Wherefore the plaintiff prays judgment against the said defend-

ants for the sum of fifteen thousand dollars ($15,000) actual damages, together with such further sum not exceeding in the aggregate three times the amount of said actual damages, and for such other and further relief as he may be entitled to have, and for costs of suit.

GREATHOUSE & BLANDING,
Attorneys for Plaintiff.

8 STATE OF CALIFORNIA, }
City and County of San Francisco, } *ss:*

Gustavus F. Deetken, being first duly sworn, deposes and says: That he is the plaintiff in the above-entitled action; that he has read the foregoing complaint in said action and knows the contents thereof, and the same is true of his own knowledge, except as to the matters which are therein stated on his information and belief, and as to those matters that he believes it to be true.

GUSTAVUS F. DEETKEN.

Subscribed and sworn to before me, this 19th day of November, A. D. 1879.

L. S. B. SAWYER,
Com'r U. S. Circuit Court, Dist. Cal.

(Endorsed:) Filed November 19, 1879. L. S. B. Sawyer, clerk.

9 *Answer.*

In the United States Circuit Court, District of California, Ninth Circuit.

GUSTAVUS F. DEETKEN, Plaintiff,
vs.
CLAUDE CAILLOT and EDMOND LEROUX, partners doing business under the firm name and style of Caillot and Leroux, Defendants. } No. 2211.

Now comes the defendants in the above-entitled case and deny generally and specifically all and singular each and every allegation in said complaint contained.

JOHN L. BOONE,
Attorney for Defendants.

10 NEVADA CITY, *County of Nevada, State of California:*

Claude Caillot, being first duly sworn, says: That he is one of the defendants in the said action; that he has heard read the foregoing answer and knows the contents thereof; that the same are true of his own knowledge except as to the matter therein stated on information and belief, and as to those matters he verily believes them to be true.

C. CAILLOT CO.

Subscribed and sworn to before me, this seventh day of January, 1880.

[SEAL.] W. K. SPENCE,
Notary Public, Nev. Co., Cal.

(Endorsed:) Service and receipt of a copy of within answer admitted this 22nd day of January, 1880. Greathouse and Blanding, plaintiff's attorneys. Filed January 23, 1880. L. S. B. Sawyer, clerk.

11 *Amended Answer.*

In the United States Circuit Court, District of California, Ninth Circuit.

GUSTAVUS F. DEETKEN, Plaintiff,

vs.

CLAUDE CAILLOT and —— LEROUX, Defendants.

The above-named defendants, by leave of the court first had, file this their amended answer to the complaint of the plaintiff filed herein.

Defendants, and each of them, deny generally and specifically all and singular each and every allegation in said complaint contained.

And as a further defense to the said action, defendants allege, and will prove upon the trial of this cause, that about the year 1863, and before the defendants in this case had commenced to work ores by the chlorination process, the plaintiff disposed of all his right, title and interest in said letters patent, for the county of Nevada, in the State of California, to one Oscar Maltman, of Nevada City, California, and that said Maltman, as the owner of said patent, disposed of a right to one Hill, of that place, to work ores by the said
12 chlorination process under the said letters patent.

That about the year 1878, and before the commencement of this suit, the said Oscar Maltman and the plaintiff herein entered into a contract or agreement, by which the plaintiff was going to bring suit against the parties who were running chlorination works in Nevada county, California, these defendants included and divide the proceeds which might be recovered in said suits between them. That the plaintiff did not own the right in said Nevada county, California, under said letters patent, from about the year 1863 to about the year 1878.

JOHN L. BOONE,
Att'y for D'f'd'ts.

(Endorsed:) Service and receipt of a copy of within amended answer admitted this 11th day of January, 1882. C. W. M. Smith, attorney for pl'ff. (Jurat Waived.) Filed by leave of court, January 11, 1882. L. S. B. Sawyer, clerk.

13 *Verdict.*

In the Circuit Court of the United States in and for the District of California.

GUSTAVUS F. DEETKEN
versus
CLAUDE CAILLOT *et al.* } No. 2211.

We, the jury, find for the plaintiff, and assess the damages at two thousand dollars.

HENRY CHANNING BEALES, *Foreman.*

(Endorsed:) Filed January 13, 1882. L. S. B. Sawyer, clerk.

14 *Judgment.*

In the Circuit Court of the United States of America, of the Ninth Judicial Circuit, in and for the District of California.

GUSTAVUS F. DEETKEN
vs.
CLAUDE CAILLOT *et al.* } No. 2211.

This cause having come in regularly for trial on the 10th day of January, 1882, being a day in the November, 1881, term of said court, before the court and a jury of twelve men duly impaneled, J. A. Wright and C. W. M. Smith, Esqs., appearing on behalf of plaintiff, and Boone & Miller, Esq'r's, on behalf of defendants, and the trial having been proceeded with on the 11th, 12th, and 13th days of said January, and witnesses on behalf of the plaintiff and of the defendants having been sworn and examined, and the evidence being closed, the cause, after arguments of counsel and the instructions of the court, having been submitted to the jury, and the jury having rendered the following verdict:

"We, the jury, find for the plaintiff, and assess the damages at two thousand dollars," and the court having ordered that judgment be entered herein in accordance with said verdict, and for costs:

15 Now, therefore, by virtue of the law and by reason of the premises, it is considered by the court that Gustavus F. Deetken, plaintiff, do have and recover of said *from* Claude Caillot and Edmond Leroux, defendants, the sum of two thousand dollars damages, and his costs in this behalf expended, taxed at one hundred and fifty-eight $\frac{80}{100}$ dollars.

Judgment entered January 13, 1882.

L. S. B SAWYER, *Clerk.*

I hereby certify that the foregoing is a full, true, and correct copy of an original judgment entered in the above-entitled cause.

Attest my hand and seal of said circuit court, on this 13th day of January, A. D. 1882.

[SEAL.] L. S. B. SAWYER, *Clerk.*

(Endorsed:) Filed January 13, 1882. L. S. B. Sawyer, *Clerk.*

16 *Clerk's Certificate.*

UNITED STATES OF AMERICA:

Circuit Court of the United States, Ninth Circuit, District of California.

GUSTAVUS F. DEETKEN *vs.* CLAUDE CAILLOT *et al.*

I, Lorenzo S. B. Sawyer, clerk of the circuit court of the United States, of the ninth judicial circuit, within and for the district of California, do hereby certify that the foregoing papers hereto annexed constitute the judgment roll in the therein entitled action.

Witness my hand and the seal of said court this 13th day of January, A. D. 1882.

[SEAL.] L. S. B. SAWYER, *Clerk*,
By J. F. O'BEIRNE, *Deputy Clerk*.

(Endorsed:) Judgment roll. Filed January 13, 1882. L. S. B. Sawyer, clerk.

17 *Bill of Exceptions in G. F. Deetken vs. C. Caillot.*

18 In the United States Circuit Court, District of California, Ninth Circuit.

GUSTAVUS F. DEETKEN, Plaintiff,

vs.

CLAUDE CAILLOT and EDMOND LEROUX, doing business under the firm name of Caillot & Co.

Messrs. Hammond & Wright, Greathouse & Blanding, and C. W. M. Smith, Esq., attorneys for plaintiff.

John L. Boone, Esq., attorney for defendants.

Be it remembered that at a stated term of said circuit court of the United States of America, held in the court-room thereof, in San Francisco, California, on the —— day of January, A. D. 1882, the above-entitled cause was brought on regularly for trial, and a jury of twelve men having been duly selected and sworn to try said cause, the following proceedings were had, to wit:

19 Plaintiff, to maintain the issues on his behalf, offered in evidence letters patent of the United States numbered 37278, and dated January 6th, A. D. 1863, which letters patent were duly admitted in evidence, and are in the words and figures following, to wit:

THE UNITED STATES OF AMERICA.

To all to whom these letters shall come:

Whereas Gustavus F. Deetken, of Nevada, California, has alleged that he has invented a new and useful improved apparatus for extracting gold from pyrites, which he states has not been known or used before his application; has made oath that he is a citizen of the

United States; that he does verily believe that he is the original and first inventor and discoverer of the said invention; and that the same hath not, to the best of his knowledge and belief, been previously known or used; has paid into the Treasury of the United States the sum of thirty-five dollars, and presented a petition to the Commissioner of Patents signifying a desire of obtaining an exclusive property in the said invention, and praying that a patent may be granted for that purpose:

These are, therefore, to grant according to law to the said Gustavus F. Deetken, his heirs, administrators, or assigns, for the term of seventeen years from the sixth day of January, one thousand
20 eight hundred and sixty-three, the full and exclusive right and liberty of making, constructing, using, and vending to others to be used, the said invention, a description whereof is given in the words of the said Gustavus F. Deetken in the schedule hereunto annexed, and is made a part of these presents.

In testimony whereof, I have caused these letters to be made patent, and the seal of the Patent Office has been hereunto affixed.

Given under my hand at the city of Washington, this sixth day of January, in the year of our Lord one thousand eight hundred and sixty-three, and of the Independence of the United States of America the eighty-seventh.

J. P. USHER,
Acting Secretary of the Interior.

Countersigned and sealed with the seal of the Patent Office.

D. P. HOLLOWAY,
Commissioner of Patents.

The schedules referred to in these letters patent, and making part of the same:

To all whom it may concern:

21 Be it known that I, Gustavus F. Deetken, of the city and county of Nevada, in the State of California, have invented a series of new and improved apparatus for the purpose of extraction of gold from pyrites. And I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings and to the letters of reference marked thereon:

Fig. 1 presents a sectional view of the gasometer.

Fig. 2 a top view of the same.

Fig. 3 a sectional view of the apparatus for freeing the chlorine gas of hydrochloric acid.

Fig. 4 exhibits a vat of 6 ft. 10 in. in diameter by 2 foot in height.

Fig, 5 shows a trough for conveying the solution of chlorides into the carboys.

The nature of my invention consists in providing one or more vats of the size and dimensions as represented in Fig. 4, mounted upon a frame or scaffold of wood, allowing the same to incline

slightly towards the side of the vat where the faucet *l* is seen. Into this vat I introduce the pyrites, which are previously roasted, after which I apply chlorine gas as generated in the apparatuses marked respectively Fig. 1 and 3, conveying the same through leaden
22 pipes to the faucet *l*, penetrating the vat from the bottom side, that is, upwards.

This gas is allowed to remain in that condition for a few days, or as the case may require, or until the whole mass of the pyrites contained in the vat shall have been completely impregnated with this chlorine gas. When this is accomplished the gas is allowed to escape by uncovering the vat. Water is poured into the vat, which filters through the mass, passing through the faucet *l* as a solution of various chlorides, whence it is received in the carboys, and there the solution is precipitated.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation:

I construct a cylindrical casting of lead from 18 to 30 inches in diameter, of about 12 inches in depth, the sides of which are about one-quarter of an inch in thickness. This vessel is also provided with another concentric vessel marked *s*, for the purpose of creating a water-joint. The lid or cover is also cast of lead, provided with a rim or flange *t* fitting into the outer vessel *s*.

p is a syphon funnel for introducing acid; *o* is a leaden discharge pipe for the generated gas, similarly provided with
23 water-joint concentric cups; *g* is a cylinder of lead, at the lower extremity of which a rake is attached, for the purpose of stirring the ingredients employed in creating the gas, and is also provided with a water-joint in concentric cups. For a complete description of the *modus operandi* of chlorine gas, we refer to Ure's Dictionary, page 410, vol. 1, edition of 1856.

Fig. 3 represents a wooden tub, about 16 in. diameter by 6 in. depth, filled with pure water to about half of its height; *o* being the pipe for conveying the gas as it *it* generated into the water, immediately under the bottle *x*.

The pipe B carries off the gas to the impregnating vats through the faucet aperture *l*, Fig. 4.

The bottle *x* is a common acid bottle, deprived of its bottom, and, as seen in Fig. 3, rests upon the pipes. The particular improvements in this apparatus are by far the simplest, economical, and most practicable, when compared with the process as applied by Woulfe, which consists of a number of necks to an earthern or glass vessel, as described in most chemical publications.

The tub which I employ contains at all times sufficient water for cleansing the gas of the hydrochloric acid. The facility with
24 which it can be connected and disconnected, as is often required, if for instance the pipes should fill with water, or when the pressure of gas should increase from various causes, has proved itself most effectually in my experiments. In the course of freeing the chlorine gas of the hydrochloric acid, it is found that sulphurous acid, as it is generated, is not consumed by the water, in which case the neck and stopper of the bottle *x* serve as an egress for the same

if such should be necessary. The sulphurous acid is easily converted into sulphuric acid in the presence of chlorine, and may thereby become essentially deleterious to the impregnating process forming sulphuretted hydrogen, with the sulphurets and sulphides which may be present in the vat, Fig. 4.

Fig. 4 presents a large circular wooden vat, mounted upon a suitable scaffold, which is coated on its inside with a composition of resin and tar, and may be made of the size and dimensions stated, tapering towards the bottom. About one inch from the bottom I place a false bottom *e*, which is perforated with a number of holes, for admitting in the first place the chlorine gas to the pyrites; secondly, for the egress of the solution of the chlorides; *d* represents a layer of gravel, coarsest at bottom and finest at the top to effect
25 a clear solution; *c* shows a layer of ore or sulphurets (pyrites) say from two to three tons according to the size of the vat; *b* is a vacant space; *a* is the lid or cover, and let into a recess or shoulder inside of the staves of the vat. When gas has been introduced into the vat, the seam or joint of this cover is closed with dough to prevent the escape of gas. *k* are ties to guard the cover from warping, the same may be hoisted by a tackle; *m* is a small trough for conveying the solution from the faucet *l* to the distributing troughs *h*, *i*. The leaden trough *i* is supported by a corresponding wooden trough, *h*, of a semicircular surface having a number of pipes situated equidistant (*u*) about 18 in., provided with stoppers of suitable material. To each of these pipes, *u*, a carboy, *w*, is placed underneath for receiving the chlorides.

I do not claim the application of chlorine gas for the working of pyrites, nor do I claim the manner of preparing the same.

But what I do claim as my invention, and for which I desire to secure by letters patent, is—

The combination of the several devices and apparatus herein described, and operated substantially as illustrated and explained.

G. F. DEETKEN.

Witnesses:

J. SILVERSMITH.

C. H. PIERCE.

(Here follows diagram, marked p. 26.)

27 The testimony as to the invention shown in the said patent was to the effect:

That the process of chlorinating sulphurets (pyrites) by means of plaintiff's apparatus embodied four distinct and separate steps, to wit:

(1.) The generation of chlorine gas.

(2.) Purifying the gas.

(3.) Impregnating the sulphurets (pyrites) with the chlorine gas.

(4.) Washing out the chloride solution from the chloridized pyrites, and precipitating the gold.

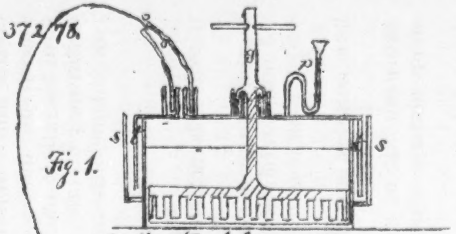
And in addition to these several separate and distinct chemical

No. 372/78.

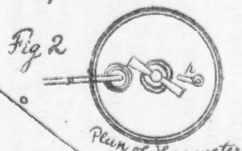
Gustavus F. Deetken

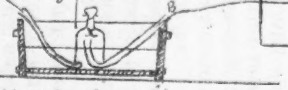
Impvd apps for Extracting Gold from Pyrites

No. 1231. Caillot et al vs. Deetken } p. 26.

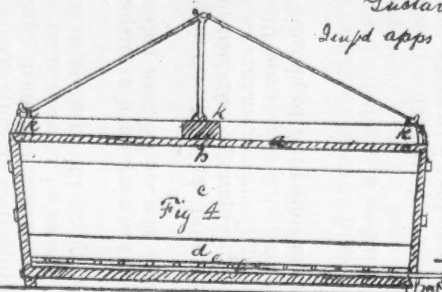


Section through Gasometer





Section through apparatus for washing gas



Section through Impregnation vat or vessel

Arrangement for running off Solution and precipitating

Witnesses
Chas. C. Wistem
J. Silvessmith

Inventor
G. F. Deetken

Correctly attached
L Bruworth Act Dept Pat Office

Wilmer Bradford, Del.

Drawn by Gus Deetken Mining Eng. 1861

operations by means of plaintiff's apparatus, the gas passes from the generator through all the several devices and stages of the several successive operations, till the precipitation of the gold, thus accomplishing the object to be attained, viz., the separation of the gold from the baser parts of its ores by one continuous, combined operation performed by the single combination of the various elements and devices found in plaintiff's machine.

To accomplish this, plaintiff's apparatus consisted—

(1.) Of an apparatus for generating chlorine gas.

(2.) Of a wash-bottle through which the gas was passed to free it from impurities.

28 (3.) Of a wooden tub or vat lined with a composition of rosin and tar, and provided with a perforated false bottom for containing the sulphurets (pyrites) during the impregnating process.

(4.) Of a series of carboys for receiving the chlorine solution, and in which the gold was precipitated.

Together with various connecting pipes, shown in the drawings, for conveying the gas and connecting the various separate operations in one combined operation.

The gas, after being generated in the generator, passed through the leaden pipe and was introduced into the washing apparatus; thence it passed through another leaden pipe into the impregnating vat, the three apparatuses, that is, the generator, the wash apparatus, and the impregnating vat, being connected consecutively by pipes, so that the gas passed automatically, by the pressure in the generator, from one to the other.

To show the state of the art, and not for the purpose of anticipating the invention described and claimed in the said letters patent, it was shown—

That the apparatus represented by Exhibit A, hereto attached, is a correct representation of an apparatus devised by

29 Frederich Carl Plattner, of Leipzig, Germany, many years prior to plaintiff's alleged invention, and that it was illustrated and described in various publications long prior to plaintiff's invention.

It appeared from the evidence that plaintiff knew of its existence and understood its use and operation long before he made his invention; that said apparatus was devised and used by said Frederich Carl Plattner for accomplishing on a small scale the same process that is accomplished by plaintiff's apparatus; that Plattner's apparatus was a small lab-ratory apparatus, capable only of treating a small quantity of ore at a time, while plaintiff's apparatus is capable of treating several tons at a time.

That Plattner's apparatus consists of a flask for containing the substances which generate chlorine gas from which the gas was evolved when heat was applied to the flask. The gas thus generated was conducted through a pipe to a wash-bottle in which it was washed, and from which it passed through another pipe into the bottom of the glass cylinder in which the ore was contained.

That plaintiff's apparatus consisted of a generator (containing

devices not in Plattner's for hastening the generation of gas),
30 in which the substances which generate chlorine gas were placed, under which generator heat was applied to evolve the gas. That the gas, when evolved, passed through a pipe to the wash-apparatus where the gas was washed, and from whence it was conveyed through another pipe and introduced into the bottom of the tub in which the ore was contained.

That the process accomplished by both of these two apparatuses is the same.

That the only difference *in result* accomplished by the two apparatuses is the hastening of the generation of gas in plaintiff's machine by reason of its larger size and the employment of a stirrer in the generator, and that Plattner's apparatus could only treat a small quantity of pyrites at a time, while plaintiff's apparatus is capable of treating several tons.

That Plattner's apparatus was incapable of treating ore in commercial quantities for practical business purposes. That a mere enlargement of Plattner's apparatus would not produce a practical machine for commercial purposes.

It also appeared in evidence, for the purpose of showing the state of the art:

31 That a generator for generating chlorine gas, constructed in all essential particulars like the one used by plaintiff in his apparatus, was illustrated and described on page —— of Ure's Dictionary, edition of 1839. A copy of this illustration is hereto annexed, and marked Exhibit B.

That plaintiff's wash-bottle is differently constructed from that shown in Plattner's apparatus, but it accomplishes the same result (washing the gas) in the same way (passing it through water). That wash-bottles for washing gas, known as Woulfe jars, had been known and used, and described in printed publications, long prior to plaintiff's invention.

That Plattner, in a work entitled "Die Probirkunst mit dem Lothrohre," published in Leipzig, Germany, in 1853, in a foot-note on page 574 of said book, described a wooden tub lined with asphaltum, and provided with a false bottom, for containing the pyrites during the impregnation with chlorine gas. A copy of this foot-note is hereto annexed and marked Exhibit.

That plaintiff had substituted for the glass flask marked *c* in the Plattner apparatus (Ex.), the generator for chlorine gas described and shown on page — of Ure's Dictionary, edition of 1839, (Ex.)

32 That plaintiff had substituted for the wash-bottle shown in Plattner's apparatus (Ex.) his new construction of wash apparatus shown in his patent.

That plaintiff had substituted for the glass cylinder for containing the ores during impregnation, shown in Plattner's apparatus (Ex. —), the wooden tub lined with pitch and tar described on page 574 of the publication "Die Probirkunst mit dem Lothrohre," (Ex. —.)

That pipes were connected from the generator to the wash apparatus, and from the wash apparatus to the vessel which contained the ores to be treated in both of said apparatuses, and that these pipes

simply served to conduct the gas from one part of the apparatus to the other.

These matters hereinbefore stated were only introduced to show the state of art, and not for the purpose of anticipating the invention patented, or raising the defense of want of novelty.

To show, however, that the several machines thus united together is what is known in law as a mere aggregation of several independent machines, and therefore not patentable as a combination,—

33 It was proved that the generator would generate chlorine gas just as effectively, so far as the mere generation of gas is concerned, when entirely disconnected from the remainder of the apparatus.

That the gas thus generated could be collected into a receptacle—such, for instance, as a jar—and transported to any distance, and then passed through a separate wash-apparatus, and thereby freed from its hydrochloric acid.

That the gas could then be again collected and transported to any distance, and introduced into any vessel in which the sulphurets were contained, and would act upon the sulphurets (pyrites) in the same manner, and just as effectively, as if it was conducted through the pipes.

It was admitted, however, that this would be a clumsy and unhandy method of proceeding, and it was shown by the evidence that this method of proceeding by separate operations in separate machines would be wholly impracticable for the business and mining purposes for which plaintiff's apparatus was intended and used.

After the evidence was all in, counsel for the defendants asked the court to instruct the jury to find a verdict for defendants on

34 the ground that the apparatus was merely an aggregation of old and independent devices, and that no invention was involved in simply connecting them together.

This instruction the court refused to give; whereupon counsel for defendants excepted.

Before the arguments of counsel commenced, counsel for defendants handed to the court the following instructions in writing, with a request that they be given to the jury as the law on the points therein stated:

"If you find that the generator, wash-bottle, and impregnating vat are separate and independent devices, each performing its duty separate and independent of each of the others, and that the several parts do not act upon or with each other so as to modify the independent action of each, then plaintiff's apparatus is what is known in law as a mere aggregation, and is not patentable. If the claim of the patent is for an apparatus composed of such independent devices which are not in any way dependent on each other to modify the independent action of each, then the patent is void."

35 The case was then argued by both the attorneys for the plaintiff and for the defendants, after which the court refused

to give the instructions as aforesaid asked by the defendants, but in place of, and as a substitute therefor, instructed the jury upon the point as follows:

"This is a combination patent. It is not a patent for a process. It is for the combination of certain devices by which that process is made available for the practical purposes of life.

* * * * * * *

"With reference to this matter of aggregation, this is something more than performing separate and independent functions here. The object is not simply to wash or generate gas or impregnate the gold. The entire object is to extract the gold from iron pyrites by some practicable and profitable mode. That is the result sought, although there may be several distinct operations. The object of this machine is, by a single machine and a single operation, not only to make gas, wash it, and impregnate the ores, but to accomplish the entire process at one operation and by a single ma-
36 chine, instead of by different machines. This in itself is a useful result, to the production of which the several elements, combined as they are, co-operate to contribute.

"So it is something more than an aggregation of independent results. It is the production of a new result, and that is the better accomplishment for the purpose by a single machine and by one process instead of many. That of itself is a useful result, if it can be accomplished in a simpler, better, and more economical way by one rather than by several machines; and if this combination attains this result, then it is something more than an aggregation. It produces a new result by a single operation, and a single operation and a single machine, what would require otherwise several distinct operations by several distinct and separate machines. If you find that to be so, then it is not a mere aggregation, but a patentable device or machine."

To the refusal to give the instructions as asked, and the giving of the charge so substituted therefor, the defendants, by their attorney, then and there duly excepted.

37 Thereupon the cause was submitted to the jury, who, after consideration of the same, rendered a verdict in favor of the plaintiff, and assessed the damages at two thousand dollars ($2,000.00).

Inasmuch as the foregoing matters do not appear of record, the court, for the purpose of making them matters of record, now signs and seals this bill of exceptions, the said bill of exceptions having been duly prepared, and amendments thereto proposed, and said bill of exceptions and proposed amendments having been submitted to the court for settlement in due time, and according to the rules and practice of this court.

LORENZO SAWYER. [SEAL.]
Circuit Judge.

And the defendants now specify the following errors of law occurring at the trial, and by them excepted to:

I.

The error of the court in refusing to instruct the jury to find for defendants.

II.

The error of the court in instructing the jury that "This is a combination patent."

38 III.

The error of the court in instructing the jury that the plaintiff's apparatus was more than a mere aggregation of separate and independent devices, and involved invention.

IV.

The error of the court in charging the jury, as it did, on the question of aggregation.

V.

The error of the court in refusing to give to the jury the following instructions which were duly asked for by defendants' counsel, viz.:

"If you find that the generator, wash-bottle, and impregnating vat are separate and independent devices, each performing its duty separate and independent of each of the others, and that the several parts do not act upon or with each other so as to modify the independent tion of each, then plaintiff's apparatus is what is known in law as a mere aggregation and is not patentable. If the claim of the patent is for an apparatus composed of such independent devices which are not in any way dependent on each other to modify the action of each, then the patent is void."

39 V.

The error of the court in instructing the jury that the plaintiff's apparatus was not a mere aggregation of several independent devices or apparatuses, each performing a separate and independent operation complete in itself, and not co-acting with the others to produce a result arising from such co-action.

40 EXHIBIT.

Extract from pages 571, 572, 573, and 574 of a printed publication entitled "Die Probirkunst dem Lothrohre ober Anleitung," published in the year 1853, and referred to in the within bill of exceptions.

The drawing referred to in the description is the one Ex. — on previous page.

EXTRACT. [Translation.]

"The extraction of gold can be done in the following manner:

"Take a glass cylinder A (Fig. 74) which is about 200 to 250 millim. high and 60 millim. in diameter, and which has a neck 18 to 20 millim. in diameter near the bottom. In this glass cylinder put

a layer of little quartz pieces which reaches to a height above the said neck. On this put first a layer of coarse quartz sand, and then a layer of clean quartz sand, in order to form a filter.

"Now the roasted ore, which has been moistened with water in the meantime, is put on top of the filter, but in such a manner that the ore lies loosely.

41 The cylinder is closed by a thin, previously-warmed rubber pipe, in which a glass pipe with two elbows has been fastened. By this glass pipe the first cylinder is connected with a second glass cylinder, B. This cylinder B contains some stiff, rolled-up blotting-paper, which is so moistened with alcohol afterwards. (The glass pipe is better made of two parts which are connected by a rubber-joint.

In order to form, for instance, 200 grammes of roasted ore, the necessary quantity of chlorine gas in the retort C, 10 grammes of manganic oxide, 40 grammes of muriatic acid, and 10 grammes of sulphuric acid, which has been mixed with the same quantity of water.

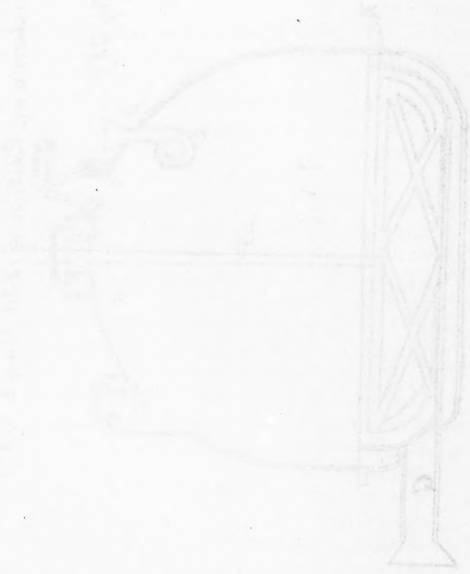
After having this retort shaken several times in order to mix its contents, put it on a small sand bath which is heated by a small alcohol lamp, and connect it by using a cork and a glass pipe in the usual way with a wash-bottle D. This wash-bottle consists of a glass bottle with a wide neck and a little more than half full of pure water, and is closed by a cork. (If there be some chlorine water on hand, it could be used direct, as the pure water saturates with the chlorine gas when the gas ascends in the form of bubbles.

The chlorine gas, having given its muriatic acid to the water in the wash-bottle, is caused to go through a glass pipe bent, according to the purpose, into the cylinder A, as the drawing shows.

42 The whole apparatus being closed air-tight, except the glass pipe, which terminates in an open end near the bottom of the cylinder C, the extraction of the gold could be done in the laboratory without the slightest smell of chlorine gas, because the surplus chlorine gas, being caused to pass from the cylinder A into the cylinder B, whose spiral-shaped blotting-paper had been well moistened with alcohol, will form ch-oral and muriatic acid, and the two products are different from the chlorine gas entirely. Lest the formation of gas goes on too rapidly, the moisture of the retort (generator) is first heated slowly, then faster, but only so fast in order to allow the chlorine gas to give its muriatic acid to the water in the wash-bottle.

Now, it can be observed plainly, the chlorine gas being absorbed in the cylinder A, the roasted ore or product changing its color when it contains a perceptible amount of gold, and finally the gas, with its yellow color, making its appearance in the empty part of the cylinder A, and passing over into the cylinder B.

The less sulphur or arsenic metals there are in the roasted substance, the quicker the chlorine gas could be perceived above said substance; but the larger the admixture of those metals, the slower the chlorine gas goes above the substance, and the glass cylinder



47

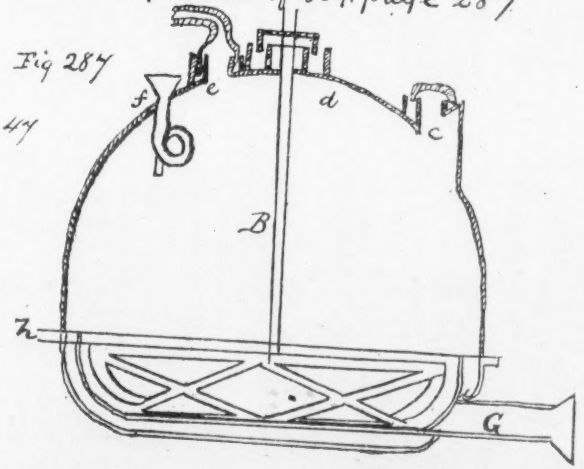
Exhibit

From Ures Dictionary. Edition of 1839. page 287

Fig 287

No. 1231.
Caillot Stahl Va.
vs.
Deetken

b. 47



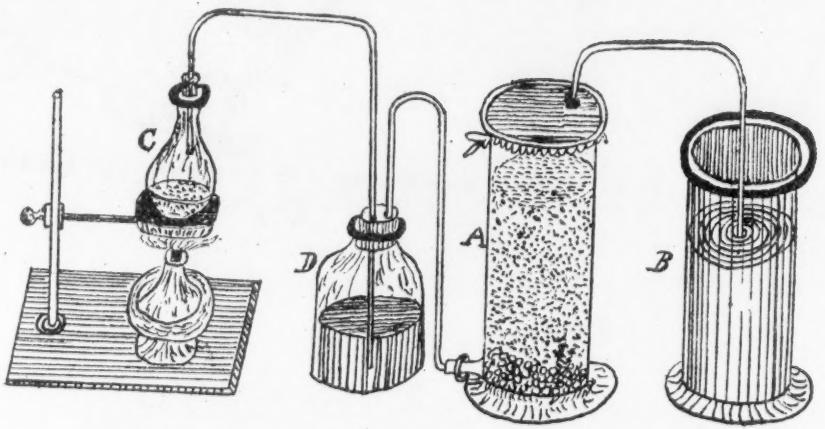
96

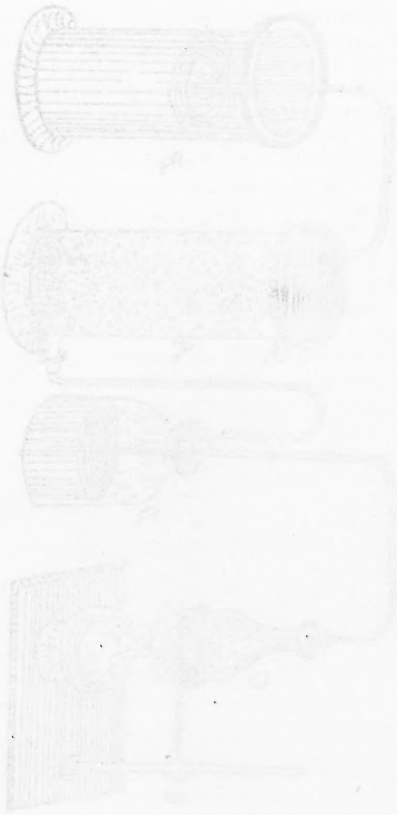
No. 1231.
Caillot et al
vs.
Bell Co.
} p. 46.

Exhibit A.

Rattner's Apparatus for Chlorinating Ores

(Referred to in the description Ex)





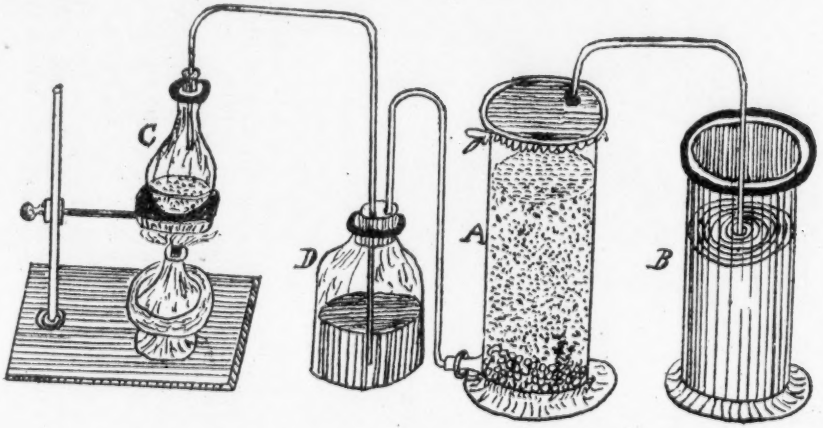
94

No. 1231.
Caillot et al
vs.
Allen
} p. 46.

Exhibit A.

Plattner's Apparatus for Chlorinating Ores

(Referred to in the description Exp)



gets heated considerably. Although all the fine particles of
43 metallic gold have been made to gold chloride, when the gas makes its appearance in the empty part of the cylinder, yet this will not be the case with the gold in the sulphur or arsenic metals, by no means. Therefore the chlorine gas must pass through the moist powder still, at least for an hour, before the extraction could be considered finished, and before the apparatus could be taken apart. (In doing so the cork of the retort C has to be loosened first, lest the water goes back when the lamp has been taken away.)

When the apparatus has been taken apart, put the glass cylinder A upon a sufficient high stand, close the neck above the bottom of the cylinder by a cork, through which there goes a short narrow glass pipe (very convenient would be a glass drain-cock), put a glass under it, and pouring upon it small quantities of hot water wash out the gold chloride and the other probably formed chlorides which are soluble in water. Hereby the cylinder has to be bent over, less some chloride remains on the bottom. Suppose the neck of the cylinders should be too far from the bottom of it, this part could be filled up by melting in pitch before the quartz is put in. The liquid is mixed with muriatic acid first, and then with a sufficient quantity of solution of ferrous sulphate, in order to separate the gold in metallic condition. Stir the mixture well with a glass
44 stick, and allow the whole thing to rest until all gold has settled down, which will occur in a short time. The extracted gold gather on a filter, wash it out with water; dry it at this time, with the filter in a porcelain cup, over a lamp.

After the filter becomes dry it is burned up in a plate or cup over an alcohol lamp under admittance of atmospheric air. Mix the rest [of the] product with a little lead and borax glass; put the whole in a cylinder of soda-paper and melt it on coal in a coal pan. The lead containing gold is forced off by using animal charcoal, the remaining gold corn is weighed.

45 EXHIBIT.

Translation of the foot-note on page 574 of the printed publication entitled "Die Probirkunst mit dem Lothrohre," published in 1853, being the same work from which the previous extract is taken.

Foot-Note.

That this process could be used on a large scale and with ores in which the gold is both free and bound with other substances I need not mention, but it might be of not little interest to say, that in this case cylindrical wooden extracting vessels which terminated in a cone inside and on the lower end could be used. These vessels are covered with asphaltum inside, and in order to wash the chlorine gas in the wash-bottle, this gas is caused to pass through a porcelaine pipe, which terminates in a ball, with a great many holes, and now through the water of the wash-bottle. By this way particles of muriatic acid are kept back.

(Here follow diagrams, marked pp. 46, 47.)

Fig. 287 represents a retort of lead, well adapted to the evolution of chlorine from the mixture of salt, manganese, and sulphuric acid, or from manganese and muriatic acid. The interior vessel is cast in lead and it has round its bottom part a cast-iron steam case. The salt and manganese are introduced by the aperture *c*, and the sulphuric acid by the siphon funnel *f*. The contact of these three substances is continually renewed by the agitator or stiner B, which consists of *a* wrought or cast-iron sheathed with lead. *e* is the gas-discharge pipe. The *al*siduums are drawn off by the bottom discharge pipe G. The heating case receives its steam by the pipe N.

Endorsed: Bill of exceptions. Filed April 30, 1884. L. S. B. Sawyer, clerk.

48 *Bond on Writ of Error.*

In the Supreme Court of the United States.

CLAUDE CAILLOT and EDMOND LEROUX, partners doing business under the firm name and style of Caillot & Leroux, Plaintiffs in Error,

vs.

GUSTAVUS F. DEETKEN, Defendant in Error.

Know all men by these presents, that we, Charles Anduran and Pierre Pellison, both of San Francisco, California, are held and firmly bound unto Gustavus F. Deetken, defendant in error in the above-entitled action, in the sum of four thousand ($4,000) dollars, lawful money of the United States of America, to be paid to said Gustavus F. Deetken, his heirs, executors, or administrators;

49 to which payment, well and truly to be made, we bind ourselves and each of us, jointly and severally, and our and each of our heirs, executors, and administrators, firmly by these presents.

Sealed with our seals, and dated this 15th day of March, A. D. 1882.

Whereas Claude Caillot and Edmond Leroux, partners doing business under the firm name and style of Caillot & Leroux, plaintiffs in error in the above-entitled action, have prosecuted a writ of error to the Supreme Court of the United States to reverse the judgment rendered by the circuit court of the United States of America, of the ninth judicial circuit, in and for the district of California, in the cause entitled Gustavus F. Deetken, plaintiff, against Claude Caillot and Edmond Leroux, partners doing business under the firm name and style of Caillot & Leroux, defendants (No. 2211):

50 Now, therefore, the condition of this obligation is such, that if the above-named plaintiffs in error shall prosecute their said writ of error to effect, and answer all damages and costs if they shall fail to make good their plea, then this obligation shall be void; otherwise, to remain in full force and virtue.

CHARLES ANDURAN. [SEAL.]
PIERRE PELLISSON. [SEAL.]

51 Signed, sealed, and delivered in presence of—
JOS. T. O'BEIRNE.

UNITED STATES OF AMERICA, } ss:
District of California, }

Charles Anduran and Pierre Pellisson, being duly sworn, each for himself deposes and says: That he is a resident and householder in said district, and is worth the sum of four thousand ($4,000) dollars in lawful money of the United States of America, exclusive of property exempt from execution, and over and above all debts and liabilities.

CHARLES ANDURAN. [SEAL.]
PIERRE PELLISSON. [SEAL.]

Subscribed and sworn to before me, this 15 day of March, A. D. 1882.

JOS. F. O'BEIRNE,
Comm'r of U. S. Circuit Court, District of California.

(Endorsed:) The form of the within bond and the sufficiency of the sureties thereon are hereby approved. Lorenzo Sawyer, U. S. circuit judge, ninth judicial circuit. Filed March 16th, 1882. L. S. B. Sawyer, clerk, by J. F. O'Beirne, deputy clerk.

52 In the Circuit Court of the United States for the District of California.

GUSTAVE F. DEETKEN, Plaintiff, }
vs. } No. 2211.
CLAUDE CAILLOT *et al.*, Defendants. }

I, L. S. B. Sawyer, clerk of the circuit court of the United States, of the ninth judicial circuit, in and for the district of California, do hereby certify that the foregoing fifty-one written pages, numbered from 1 to 51 inclusive, are a full, true, and correct copy of the record and of all proceedings in the therein-entitled cause, and that the same together constitute the return to the annexed writ of error.

53 Witness my hand and the seal of said circuit court, this 25th day of July, A. D. 1884.

[SEAL.] L. S. B. SAWYER, *Clerk.*

54 UNITED STATES OF AMERICA, *ss:*

The President of the United States of America to the judges of the circuit court of the United States, of the ninth judicial circuit, in and for the district of California, Greeting:

Because in the record and proceedings, and also in the rendition of the judgment of a plea which is in the said circuit court, before you, between Claude Caillot and Edward Leroux, partners doing business under the firm name and style of Caillot & Leroux, plaintiffs in error, and Gustavus F. Deetken, defendant in error, a manifest error hath happened to the great damage of the said plaintiffs in error, as by their complaint appears, and it being fit that the error, if any there hath been, should be duly corrected, and full and

speedy justice done to the parties aforesaid in this behalf, you are hereby commanded, if judgment be therein given, that then under your seal, distinctly and openly, you send the record and proceedings aforesaid, with all things concerning the same, to the Supreme Court of the United States, together with this writ, so that you have the same at the city of Washington, in the District of Columbia, on the second Monday of October next, in the said Supreme Court to be there and then held, that the record and proceedings aforesaid be inspected, the said Supreme Court may cause further to be done therein to correct that error, what of right and according to the law and custom of the United States should be done.

Witness the Hon. Morrison R. Waite, Chief Justice of the Supreme Court of the United States, this 16th day of March, in the year of our Lord one thousand eight hundred and eighty-two, and of the Independence of the United States the one hundred and sixth.

[SEAL.] L. S. B. SAWYER, *Clerk*,
By J. F. O'BEIRNE, *Deputy Clerk*.

The above writ of error is hereby allowed.

LORENZO SAWYER,
U. S. Circuit Judge, Ninth Judicial Circuit.

55 *The Answer of the Judges of the Circuit Court of the United States for the District of California.*

The record and all proceedings of the plaint whereof mention is within made, with all things touching the same, we certify under the seal of our said court to the Supreme Court of the United States within mentioned, at the day and place within contained, in a certain schedule to this writ annexed, as within we are commanded.

By the court:

[SEAL.] L. S. B. SAWYER, *Clerk*.

[Endorsed:] No. 2211. United States Supreme Court. Claude Caillot *et al.*, plaintiffs in error, *vs.* Gustavus F. Deetken, defendant in error. Writ of error. Filed 16th March, 1882. L. S. B. Sawyer, clerk, by J. F. O'Beirne, d'p'y cl'k.

56 UNITED STATES OF AMERICA, *ss*:

To Gustavus F. Deetken, Greeting:

You are hereby cited and admonished to be and appear at the Supreme Court of the United States, to be held in the city of Washington, District of Columbia, on the second Monday of October, A. D. 1882, pursuant to a writ of error filed in the clerk's office of the circuit court of the United States and for the district of California, in the cause wherein Claude Caillot *et al.* are plaintiffs in error and you are defendant in error, to show cause, if any there be, why the judgment in the said writ of error mentioned should not be corrected, and speedy justice should not be done to the parties in that behalf.

Witness the Honorable Lorenzo Sawyer, judge of the U. S. circuit court for the district of California, this 16 day of March, A. D. 1882, and of the Independence of the United States the 106th.

[SEAL.] LORENZO SAWYER,
U. S. Circuit Judge, Ninth Judicial Circuit.

57 [Endorsed:] No. 2211. United States Supreme Court. Claude Caillot *et al.*, plaintiffs in error, *vs.* Gustavus F. Deetken, defendant in error. Citation. Service of a copy of the within citation admitted, this 17th day of March, 1882. Hammond & Wright, att'y for defe't in error. Filed Mach 17, 1882. L. S. B. Sawyer, clerk, by J. F. O'Beirne, deputy clerk.

Endorsed on cover: California C. C. U. S. No. 1231. Claude Caillot and Edward Leroux, partners as Caillot & Leroux, plaintiffs in error, *vs.* Gustavus F. Deetken. Filed November 28th, 1884.

113-215

DEC 31 1884
JAMES H. McKENNEY

IN THE

SUPREME COURT

—OF THE—

UNITED STATES.

GUSTAVUS F. DEETKEN,

Plaintiff and Respondent in Error,

VS.

CLAUDE CAILLOT ET AL.,

Defendants and Appellants in Error.

APPELLANTS' ARGUMENT.

J. J. SCRIVNER,

Solicitor for Defendants and Appellants.

SCRIVNER & BOONE,

Of Council.

Filed ..... *A. D. 1884.*

..... *Clerk.*

By ..... *Deputy Clerk.*

SAN FRANCISCO:

GEO. SPAULDING & CO., GENERAL BOOK AND JOB PRINTERS,

414 CLAY STREET.

In the Supreme Court

OF THE

UNITED STATES.

GUSTAVUS F. DEETKEN,
Plaintiff and Respondent in Error,
vs.
CLAUDE CAILLOT AND EDMUND LEROUX, PARTNERS, DOING BUSINESS UNDER THE FIRM NAME OF CAILLOT & LEROUX,
Defendants and Appellants in Error.

Appellants' Argument.

This case is brought up on appeal from the United States Circuit Court for the Ninth Judicial Circuit, on a statement of errors. By stipulation of the respective attorneys for both parties, the case is submitted on printed arguments under Rule 20 of the Supreme Court of the United States.

Upon the trial of this case in the lower Court the only exceptions noted by the defendants relate to the question of aggregation, and consequently as a result thereof, a want of invention, although several other defenses were interposed and passed upon by the Court without exceptions being noted. This argument must therefore be confined to the question of aggregation and consequent want of invention.

The doctrine of aggregation, as that doctrine is now understood, is a comparatively recent one, and although this Court in a number of instances have defined and given its scope, many of our Circuit Judges have overlooked the doctrine. Whether from too implicit confidence in the action of the Commissioner of Patents in making the grant or from an insufficient understanding of the doctrine, is immaterial.

Prior to 1873 very little attention had been given by the Federal Courts to the difference between a combination and an aggregation in a patentable sense. In that year this Court, in the case of *Hailes* vs. *Van Worner*, 20 Wall., 353, fully stated and defined the doctrine, and ever since then this Court has consistently followed the rule therein laid down.

This doctrine was very ably stated in *Pickering* vs. *McCullough*, 104 U. S., 310, wherein it is said:

"In a patentable combination of old elements, "all the constituents must so enter into it as that "each qualifies every other. To draw an illus- "tration from another branch of the law they "must be joint tenants of the domain of inven- "tion seized each of every part *per my et per tout*, "and not mere tenants in common with separate "interests and estates. It must form either a "new machine of a distinct character and func- "tion or produce a result due to the joint and "co-operating action of all the elements, and "which is not the mere adding together of sepa- "rate contributions."

This is the doctrine upon which we rely in this case.

Very little regard was paid to the character of combination claims granted by the United States Patent Office prior to 1869, when Commissioner Fisher held, in the case of *Thomas Kerr ex parte Com's*, Decs. 1869, 16, that "no legitimate combi- "nation exists between two things which do not "co-operate to produce the result," thus laying down the same rule adopted by this Court in 1873 in *Hailes* vs. *Van Worner, supra*.

DEETKEN'S PATENT.

The Deetken patent, sued on in this case, was issued in 1863, before the doctrine of aggregation was understood and applied, either by the Patent Office or the Courts.

The patent purports to cover an *apparatus* for chlorinating ores.

The process of chlorination and also the man ner of preparing the chlorine gas, are both disclaimed in the patent. The patent says:

"I do not claim the application of chlorine gas "for the working of pyrites, nor do I claim the "manner of preparing the same. But what I do "claim as my invention and for which I desire to "secure by Letters Patent is, *The combination of* "*the several devices and apparatus herein described*, "and operated substantially as illustrated and "explained."

What he claims, then, is "*the several devices and* "*apparatus*"—not *apparatuses*, but several devices composing one single apparatus.

Now, in order to properly consider the question of aggregation, we must first become familiar with the State of the Art as it was developed in the trial of the case, as shown by the transcript herein.

STATE OF THE ART.

The testimony shows that Plattner used an apparatus consisting of a gas generator, a wash-bottle, and a chlorination tank or vessel for accomplishing the identical process of chlorination which is accomplished by the patented apparatus, long prior to the date of Deetken's application for a patent, and that such machine or apparatus was described in a printed publication prior to such application (see exhibit A, Trans.); also, that these separate machines or devices were connected together by pipes through which the gas passed by pressure from the generator to the wash-bottle and from the wash-bottle to the chlorination vessel in which the ore or pyrites were contained, likewise forming a single apparatus composed of several machines or devices. (Same Exhibit.)

But it was admitted that Plattner's apparatus was a small laboratory apparatus, not capable of chlorinating pyrites on a commercial scale; (his gas generator was a glass flask in which the ingredients which evolved the gas were placed and subjected to heat), and that it had no stirring device in it.

But it was shown that a generator for generating chlorine gas similar in all particulars to the

one adopted and used by Deetken in his apparatus and containing a like stirrer, was described and illustrated in Ure's Dictionary, published in 1839, page 287 (see Ex. marked 47, Trans.), prior to Deetken's application for a patent. So, all that Deetken did in this regard was to substitute the generator described and illustrated in Ure's Dictionary for Plattner's glass generator.

THE WASH-BOTTLE.

Plattner used a Woulfe jar for washing the gas. It is admitted that such jars had been used for washing all kinds of gas and freeing it from impurities, long before Deetken's application, and had been described in numerous publications.

Deetken used a somewhat different make of wash-bottle, but it did precisely the same thing as the Woulfe jar. His wash-bottle is not patented nor is it specifically a part of his patent. He merely substituted *his* wash-bottle for the wash-bottle used by Plattner.

CHLORINATION TANK.

Plattner used a glass jar in his laboratory apparatus in which the pyrites were subjected to the action of the chlorine gas. Deetken uses a wooden tub with a false bottom; but Plattner, in his work, "Die Probirkunst," etc., (Ex., footnote,

page 17, Trans.) describes just such a wooden tub, false bottom and all, so that Deetken merely substituted Plattner's wooden tub for the glass jar shown in his laboratory apparatus.

In fact, Deetken merely exercised good judgment in aggregating well-known machines and substituting them for the smaller machines of the same kind in Plattner's apparatus.

"The aggregation of prior reversible flues with "features which before existed in unison in the "same stove, operating together in the same way "in a stove without reversible flues, is not a pat-"entable combination."

Perry vs. *Co-operative Foundry Co.*, XII Fed. Rep., 436.

"The mere enlargement of an article does not "constitute invention."

Planing Machine Co. vs. *Keith*, 101 U. S., 479.

Phillips vs. *Page*, 24 How., 164.

It seems to me that this case is fully covered by the case of *Hailes* vs. *Van Wormer, supra*. Deetken had Plattner's apparatus before him. He merely culled out and substituted for the laboratory sized machines of Plattner's apparatus, full-sized working machines, such as were well known.

The only difference between the two apparatuses is that of capacity—size. The operation, mode, method, process and result were identical, except in degree—capacity.

But let us look at this question of aggregation in another light.

The generator used in this apparatus is a machine for manufacturing chlorine gas.

Chlorine gas is an article of commerce. It is used for many purposes, its use for chlorinating ores being only one of the uses it is put to.

When the generator has manufactured the gas it has done all it can do. It has no further action, operation or result on the remaining parts of the apparatus or process. Its work is finished, and it serves no other purpose in the process of chlorinating ores. It is simply a machine for manufacturing chlorine gas, like a machine for manufacturing soap or candles, or any other article of trade or commerce; and the chlorine gas, when it comes out of the machine, is ready for any use, whether it be for disinfecting purposes, manufacturing chloride of lime or chlorinating ores.

The manufactured product, chlorine gas, could

be collected in a vessel and transported to any distance and there used for chlorinating ores, or for any other purpose to which it is adapted. (See Transcript, page 13, line 33, *et seq*.)

Hence the gas generator is an independent machine, complete in all of its parts, doing a single duty, viz., manufacturing chlorine gas. It forms no part of the *chlorinating* apparatus any more than an apparatus for manufacturing soap forms a part of a wool-washing apparatus. It has no effect whatever on the subsequent steps or co-action with them, because it would do the same thing if it was entirely disconnected from them.

The wash-bottle also is a separate and independent machine. Its office is simply to remove the impurities from the gas. This it would do if the gas was manufactured in England and transported to California in tight vessels and then passed into and through the wash apparatus. Gas is thus handled and washed in numerous instances in the manufactures. Besides, this part of the operation is not essential in chlorinating ores. The crude gas could be used with the same result and benefit as the washed gas. The object of washing it is to remove a small portion of hydrochloric acid contained in it and thus make it in a small degree more effective.

When the gas has passed through this wash apparatus it is still chlorine gas. Its nature has not been changed; it is simply purified. In fact, the wash apparatus may be said to be a part of the gas-making apparatus, not an essential part, but simply a beneficial part so far as the obtaining of the *best result* is concerned.

But this purification is an independent process. The wash apparatus need not be combined or connected with the generator to accomplish it. They might be entirely disconnected and accomplish the same result.

Now, having manufactured our chlorine gas in England or France and brought it to New York in closed vessels, and having passed the gas through a wash apparatus in New York and again put it up in a closed vessel, we can transport it to California and there chlorinate ores by introducing it into a vessel or tub in which pyrites are contained, and here the real operation of chlorination takes place. There is no necessary connection between any two of the devices.

Plattner himself in his laboratory apparatus only aggregated the several machines together *for convenience.* His discovery or invention was the process of chlorination, not the machinery through which the gas was made and the chlorination car-

ried on. He merely brought the several machines into juxtaposition *for convenience*, and not from any necessity created by the object sought, viz., the chlorination of pyrites, because he could have purchased his chlorine gas instead of making it, and yet carried on his process just as effectveliy, if not as conveniently. "All the parts or devices "of the combination claimed must co-operate to "produce a given result in order to form a legit- "imate combination; and if one part does not co- "operate with the others, the patent is void for "want of unity and co-operation of its parts."

Swift vs. *Whisen*, 3 Fish., 343.

Stephenson vs. *Brooklyn C. T. R. R. Co.*, 19 Blatch., 473.

"Co-operation does not mean merely acting to- "gether or simultaneously, but unitedly to a com- "mon end—a unitary result. Each and every "part must have its sub-function to perform, and "each must have a certain relation to and de- "pendence upon the other."

Hoffman vs. *Young*, 18 O. G., 794.

"A combination to be patentable must produce "a different force or effect or result in the com- "bined forces or processes from that given by "their separate parts. There must be a new re- "sult produced by their union; if not, it is only "an aggregation of separate elements."

Reckendorfer vs. *Faber*, 92 U. S., 347.

Therefore, Plattner himself would not have been entitled to a patent for the combination of these separate devices solely, as he was simply an aggregator.

How, then, could Deetken, who simply substituted well-known equivalents for the Plattner devices, be any more entitled to a patent?

"Either the instrumentalities employed or the "effect caused by their operation must be new to "constitute a patentable combination. If sub- "stantially the same devices have been used be- "fore for a like purpose, or if they are applied "merely to effectuate a method known and prac- "ticed before such employment of them, will not "be protected by a patent."

Northwestern Co. vs. *Philadelphia Co.*, 1 Ban. & Ard., 177.

I submit that under these authorities the Court below erred in its charge to the jury in the particulars stated in the Bill of Exceptions.

Respectfully submitted.

J. J. SCRIVNER,
Solicitor for Defendant and Appellant.

SCRIVNER & BOONE,
Of Counsel.

Service hereof admitted and copy received this day of 1884.

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Attorney for

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BRIEF FOR DEFENDANT IN ERROR.

SUPREME COURT OF THE UNITED STATES

October Term, 1884.

No. 1231.

CLAUDE CAILLOT AND EDMOND LEROUX, PARTNERS AS CAILLOT AND LEROUX, PLAINTIFFS IN ERROR,

vs.

GUSTAVUS F. DEETKEN, DEFENDANT IN ERROR.

IN ERROR TO THE CIRCUIT COURT OF THE UNITED STATES FOR THE DISTRICT OF CALIFORNIA.

HANNA & JOHNSTON,
Attorneys for Dft. in Error.
JOHN A. WRIGHT,
Of Counsel.

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BRIEF FOR DEFENDANT IN ERROR.

PRELIMINARY NOTE—As the "Appellant's Argument" (?)—Brief for plaintiff in error—does not conform to the order required by sub-division 2 of Rule 21 of this Court, counsel for defendant in error deem it incumbent on them to follow that order in their brief. We shall therefore set forth both the specification of errors and statement of the case which we would be permitted to omit (under sub-division 3 of the rule) had counsel for plaintiffs in error adhered to the order of argument required of them.

STATEMENT OF THE CASE.

This was an action at law brought in the California Circuit by defendant in error against the plaintiffs in error, to recover damages for infringement of letters patent of the United States, No. 37,278, being for an "Improved Apparatus for Extracting Gold from Pyrites"—that is sulphurets.

Defendant in error recovered judgment for $2,000 damages and the plaintiffs in error brought the case to this Court.

The letters patent are found on pages 7, 8, 9 and 10 of the transcript of the record, between folios 19 and 27.

The sole question involved in the case is, whether the patented apparatus was a combination involving invention or a mere aggregation?

By referring to the specification of the patent (transcript of record, folios 21 to 27) it will be seen that the process which the apparatus was designed to carry into effect, consisted of the application of pure chlorine gas to the working of pyrites in order to obtain gold. The patentee declares (folios 25 to 27): "I do not claim the application of chlorine gas for the working of pyrites, nor do I claim the manner of preparing the same," but I do claim the apparatus set forth.

The difficulties in the way of using chlorine gas for the extraction of gold from pyrites on a commercial scale, are described more or less clearly in several places in the transcript. They may be briefly stated as follows:

First. The gas must be generated speedily and in large quantities.

Second. The gas must be cleansed from hydrochloric acid after its generation.

(Folio 24 to 25)

Third. The gas must be applied in its pure state to a large quantity of the pyrites in such manner as to impregnate the whole of the mass.

(Folio 29 to 31.)

It is not shown that prior to the plaintiff's (defendant in error's) invention, there had ever been an apparatus capable of performing the work of reducing gold from pyrites in any practical way. On the contrary it appears by the testimony as to the state of the art (folio 29 to 31) that the only other apparatus in existence was a small one for use in a laboratory, and that a mere enlargement of this laboratory apparatus would not produce a practical machine for commercial purposes.

The plaintiff's (defendant in error's) apparatus consists in brief of a gas generator, a wash-bottle and impregnating vat, respectively shown by figures 1, 2 and 3, of the diagram, between pages 10 and 11 of the record.

The generator, (fig. 1) is designed to generate a large quantity of gas and contains a stirrer (g) intended to accomplish, and which does accomplish, the hastening of the generation of the gas (folios 30 and 31.) The generator is connected by leaden pipes, with a device (figure 3) for washing the gas. This device, in the language of the specification (folio 24) " contains at all times sufficient water for cleansing the gas " of hydrochloric acid, and is so arranged that it can be connected and " disconnected as often as required; if for instance, the pipes should " fill with water or the pressure of gas should increase from various " causes. In the course of freeing the chlorine gas of the hydrochloric " acid it is found that sulphurous acid as it is generated is not con- " sumed by the water, in which case the neck and stopper of the bot- " tle (x) serve as an egress for the sulphurous acid."

The gas washing apparatus (figure 3) is connected with a large vat (figure 4) by a leaden pipe (B). This vat (figure 4) has a perforated false bottom, on the top of which the pyrites are placed, and where they receive the impregnation of the purified gas from figure 3.

Figure 4 is again connected with a series of carboys for receiving the chlorine solution coming from the pyrites after their impregnation. In these carboys the gold is found precipitated. As it is obvious that any other receptacles or receptacle would answer this purpose, the carboys are not claimed as part of the combination.

The question as to whether or not this apparatus is a combination involving invention, or a mere aggregation was raised upon the trial by a request from the counsel for defendants below (plaintiffs in error here) for the following instruction to the jury:

" If you find that the generator, wash bottle and impregnating vat, are separate and independent devices, each performing its duty separate and independent of each of the others, and that the several

parts do not act upon or with each other so as to modify this independent action of each, then the plaintiff's patent is what is known in law as a mere aggregation and is not patentable. If the claim or patent is for an apparatus based upon such independent devices, which are not in any way dependent on each other to modify the independent action of each, then the patent is void."

These instructions the Court refused to give, and instead instructed the jury upon the point as follows:

"This is a combination patent. It is not a patent for a process. It is for a combination of certain devices by which that process is made available for the practical purposes of life.

* * * * * * * *

With reference to this matter of aggregation, it is something more than performing separate and independent functions here. The object is not simply to wash or generate the gas or impregnate the gold. The entire object is to extract the gold from iron pyrites by some practical and profitable mode. That is the result sought, although there may be several distinct operations.

The object of this machine is, *by a single machine and by a single operation not only to make gas, wash it and impregnate the ores, but to accomplish the entire process by one operation and by one single machine,* instead of by different machines. That is in itself a useful result to the production of which the several elements combined as they are co-operate to contribute.

So it is something more than an aggregation of independent results; it is the production of a new result, and that is the better accomplished for the purpose by a single machine and by one process instead of many.

That of itself is a useful result, if it can be accomplished in a simpler, better and more economical way by one rather than by several machines; and if this combination attains this result then it is something more than an aggregation. It produces a new result by a single operation and a single machine what would require several distinct operations by several distinct and separate machines. If you find that to be so, then it is not a mere aggregation but a patentable device or machine."

ALLEGED ERRORS ASSIGNED.

As before stated the "Plaintiffs' Argument," (Brief for Plaintiffs in Error) does not contain a specification of the errors relied upon and intended to be urged.

The assignment of errors, alleged and excepted to at the trial are contained on page 15 of the transcript of record and are as follows:

I.

The error of the Court in refusing to instruct the jury to find for defendants.

II.

The error of the Court in instructing the jury that "This is a combination patent."

III.

The error of the Court in instructing the jury that the plaintiff's apparatus was more than a mere aggregation of separate and independent devices and involved invention.

IV.

The error of the Court in charging the jury, as it did, on the questions of aggregation.

V.

The error of the Court in refusing to give to the jury the following instructions, which were duly asked for by defendant's counsel, viz: "If you find that the generator, wash-bottle and impregnating-vat are separate and independent devices, each performing its duty separate and independent of each of the others, and that the several parts do not act upon or with each other, so as to modify the independent action of each, then plaintiff's apparatus is what is known in law as a mere aggregation and is not patentable. If the claim of the patent is for an apparatus composed of such independent devices, which are not in way dependent on each other to modify the action of each, then the patent is void."

VI.

The error of the Court in instructing the jury that the plaintiff's apparatus was not a mere aggregation of several independent devices or apparatuses, each performing a separate and independent operation complete in itself, and not co-acting with the others to produce a result arising from such co-action."

Under the rule in Phillips *vs.* Seymore, 1st Otto, 648, counsel for defendant in error, assume that only so much of the foregoing assignments as seem material will be considered upon the appeal, and hence the points of law and fact, to be presented by us, will relate only to the question of combination or mere aggregation.

POINTS OF LAW AND FACT.

We concur in the general opinion of the bar that the definition of "aggregation," given in Pickering *vs.* McCullough (104 U. S., 310) by this Court, is lucid and full.

Taking that definition as containing a statement of all essential requisites of a patentable combination, we contend that the apparatus of the defendant in error displays all of these essential requisites.

Each constituent or element of the apparatus qualifies or aids the ultimate and proximate object of every other. They are joint-tenants of the domain of invention, seized each of every part, *per my et per tout.*

The ultimate object to be accomplished is to obtain the gold from the pyrites by means of chlorine gas. The immediate function of the generator is to produce chlorine gas. Without the exercise of that

function, in a suitable manner the apparatus would be useless. As the function is essential, the part played by the generator is equivalent to the title of a "joint tenant," for it holds the whole of the invention by the existence of its necessary and immediate function.

But the immediate function of the generator would be inadequate for producing the ultimate result designed unless the exercise of that function is qualified and supplemented by the purification of the gas produced. This further function is accomplished by the device for washing the gas, which is attached to the generator and assists in producing the joint result by purifying the whole of the gas produced by the generator, as rapidly as it is produced. Without the purification of the gas, as speedily and as adequately as the extent and rapidity of its production by the generator require, the washing device and the generator would each and both be insufficient for the general object, viz: the separation of gold from pyrites by means of chlorine gas in a manner available for the practical purposes of life. For, as stated in the specification (folios 24 and 25) and as shown in the testimony, as to the state of the art (contained between folios 29 and 33) and as shown in the testimony produced to maintain the idea of aggregation (contained in folios 33 and 34) the washing of the gas is essentially necessary to the impregnating process, as otherwise the gas produced by the generator alone would contain hydro-chloric acid, and if not properly washed the sulphurous acid, produced in the process, would be easily converted into sulphuric acid, in the presence of chlorine, and thereby become essentially deleterious to the impregnating process, forming sulphuretted hydrogen with the sulphurets and sulphides which might be present in the pyrites.

The washing apparatus thereby being the second element of the combination contributes to the joint result, viz: the production of the gold from the sulphurets, and modifies the action of the first element by its own essential function of washing the gas. Without the existence of that function and its proper exercise, the desired effect could not be accomplished. It is thus tenant of the result, with the generator, as joint holder and producer of the whole estate of invention, *per my et per tout*.

So with the impregnating-vat. It likewise contributes to the apparatus a function which gives additional efficiency to the other elements.

It is connected with the other two devices by means of leaden pipes and serves to complete, with them, one continuous, combined operation, performed by the single combination of the various devices found in the machine.

As shown by the testimony (folio 28) the gas passes automatically by the pressure in the generator, from it, through the washing apparatus and thence under the perforated false bottom in the impregnating vat, over which are laid the pyrites.

The result accomplished by the generator in plaintiffs' machine is the hastening of the generation of gas by reason of its size and the employment of a stirrer (folios 30 and 31).

This result is qualified, and its effectiveness for the purpose of the

invention assisted by the adaptability of the device for washing to the necessity of a rapid and thorough cleaning of the gas.

The rapidity and thoroughness of action in the creation of the gas and its cleansing, thus produced by the generator and the washing apparatus, is taken advantage of by the capacity and form of the Impregnating Vat, its perforated bottom admitting the gas to all parts of the heap of pyrites placed on top; thus taking advantage immediately of the rapidity and productiveness obtained from the generator and washing apparatus, and applying their functions at once and on an advantageous scale and in a useful manner to the accomplishment of the result, viz: The separation of the gold from its baser ores.

If the design, shape, material or other qualities of the Impregnating Vat were not suited to the purpose of taking advantage of the result obtained by the generator and modified by the washing apparatus, the combination would plainly not be suited to the end intended, viz: The separation of the gold from the baser ores.

Hence the Impregnating Vat contributes to the general result by giving additional efficiency to the other elements and by means of its perforated false bottom, effectually directs the mode and result of the action of the others.

State of the Art.

The only evidence introduced to show the state of the art, was introduced solely for that purpose and not for the purpose of anticipating the invention patented, or to raise the defence of want of novelty (folios 32 and 33).

Novelty of the apparatus being conceded, and its usefulness established by the fact that the defendants (Plaintiffs in Error) had used it themselves, the question as to whether or not it was a mere aggregation, is one easily solved.

There is no evidence that the operation of impregnating pyrites with chlorine gas has ever been divided into separate steps.

No process has ever been known of generating gas in one place, thence transporting it to another and there cleaning it, thence to another and there forcing it through the pyrites.

On the contrary, although it is admittedly *possible* to generate gas in one part of the world, transport it to another and there wash it, and thence to a third and there with it impregnate the pyrites, it was shown by the evidence that this method of procedure by separate operations, in separate machines, would be wholly impracticable for the business of mining for which the plaintiff's (Defendant in Error's) apparatus was intended and used (folios 33 and 34).

And it will be seen by the testimony (fols. 27 to 28) that the object to be attained by the apparatus of defendant in error was the separation of the gold from the baser parts of its composition by one continuous, combined operation, performed by the single combination of the various elements and devices to be found in his machine.

Counsel for plaintiffs in error assert in their brief (p. 8) that "chlo-

rine gas is an article of commerce," and again (p. 9), "chlorine gas" may be "manufactured in England and transported to California in tight vessels and then passed into and through the wash apparatus. Gas is thus handled and washed in numerous instances in the manufactures." There is no evidence whatever to justify this assertion. Even assuming that the Court will take judicial cognizance of all the arts, manufactures and commerce of the world, we doubt if such a method of using or dealing in gas can be found. The gentlemen are indebted to their imagination for their fact.

A purely imaginary and wholly impractical division of the labor of any machine uniting in its operation several distinct functions to produce a common result, would be a strange ground upon which to rest a decision declaring the machine a mere mechanical juxtaposition and not a vital union.

This method of reasoning would speedily undermine all progress in manufacture, for whatever the result obtained by the most complicated piece of machinery, displaying the greatest ingenuity and inventive skill, its elementary functions might be accomplished by the rudest and simplest methods.

In Forbush vs. Cook, 2 Fisher, 669, Mr. Justice Curtis, in the following language, plainly stated that aggregation is not to be determined by the fact whether all parts of the combination must act at the same time to make a valid claim for a combination. Said the learned Justice: "It is not necessary that the several elementary parts of the combination act simultaneously. If the elementary parts are so arranged that the successful action of each contributes to produce some one practical result, which result would tend to the production of the simultaneous or successive action of one elementary parts viewed as the entire whole, a valid claim for thus combining these elementary parts may be made."

In the case at bar, each constituent element of the combination contributes a new and indispensible feature to every other. The function of each is modified by the effect and function of every other. Each gives additional efficiency to the others and separately helps to vary or extend the mode and result of the joint action, and the total result is due to the joint co-operating action of all the elements.

The gas generator speedily and largely produces gas, the gas so produced is as speedily and fully washed of its impurities by the washing apparatus as is required by the work of the generator and by the necessities of the result to be accomplished; and the Impregnating Vat, in all its essential features, is adequate to the performance of the duty imposed upon it by the other two elements of the combination, and by the adequacy of its shape, size, material and method of action, co-operates with the other elements and performs its part towards fully accomplishing the general result.

The only other apparatus shown by the record to have been used for the separation of gold from pyrites was the Plattner apparatus.

That apparatus was a small labatory apparatus, capable of treating only a small quantity of ore at a time, while plaintiff's apparatus is capable of treating several tons at a time. And it appeared that a